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TITLE OF THE INVENTION

METHOD AND APPARATUS FOR EDITING AND  
PROCESSING A DOCUMENT USING A PRINTER DRIVER

CROSS REFERENCE TO RELATED DOCUMENTS

This document claims priority on and contains subject matter related to Japanese Patent Application No. 11-273185, filed on September 27, 1999, and the entire contents of which are hereby incorporated herein by reference.

BACKGROUND OF THE INVENTIONField of the Invention

The present invention relates to a printing image forming apparatus using a printer driver, and more particularly, to an image forming apparatus and image forming method in which a document image, instructed to be printed through the printer driver, can be printed after having been edited and processed in the printer driver instead of being edited and processed using an application. The present invention also relates to a recording medium in which a program to perform the image forming method is recorded, a print controlling apparatus with the program installed, and an image processing system including the print controlling apparatus and a printer.

Discussion of the Background

When an image to be printed is edited and processed with an image processing system, a document is edited and processed in an application because the editing can not be simply performed and processed by a printer driver. Therefore, especially when an image which has been edited and set is re-edited, it is hard to simply perform the editing operation.

### SUMMARY OF THE INVENTION

The present invention has been made in view of the above-discussed and other problems and addresses the above-discussed and other problems.

The present invention advantageously provides a novel  
5 printing image forming apparatus enabling an operator to simply edit, on a printer driver, a document on a computer and to print the document.

The present invention further advantageously provides a novel printing method, novel print control apparatus, and novel image processing system, which also enable an operator to simply edit, on a printer driver, a document on a computer and to print the document.

10 According to an embodiment of the present invention, the printing image forming apparatus includes a spacing device to form a space in an image of an original document to be printed for inserting a note into a document on a computer, an inserting device to insert text, images, graphics, and so forth into the space formed on the page as the note, and a display  
15 indicating device to display the combined image on a screen of a display as a preview.

### BRIEF DESCRIPTION OF THE DRAWINGS

A more complete appreciation of the present invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the  
20 accompanying drawings, wherein:

Figs. 1A and 1B illustrate an image on an original page, and an image on a page obtained by an image forming apparatus according to the present invention, respectively; and  
Fig. 2 is a flow chart for explaining a control method of the image forming apparatus

according to the present invention.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, wherein like reference numerals designate identical or  
5 corresponding parts throughout the several views, Figs. 1A and 1B explain an operation of a  
printer driver according to an embodiment of the present invention.

Fig. 1A illustrates an image of an original document to be printed on an original page,  
and Fig. 1B illustrates an image of the original document on a page in which a note is inserted  
into the original image. That is, the present invention can print an original document  
10 generated, for example, by a computer. Fig. 1A shows an image of an original page of the  
original document. Fig. 1B shows a combined image in which the original image of Fig. 1A  
is reduced and an area at the bottom of the image is left open so that a note can be inserted in  
that space. Thus, Fig. 1B illustrates an example of a combined image in which the original  
image is reduced and a comment as a note is inserted at a lower part of the original page.

15 A printing image forming apparatus using the printer driver according to the present  
invention includes an inserting device to insert text, images, graphics, etc. as a note into an  
original document produced on a computer when the original document is printed. The  
printing image forming apparatus also includes a spacing device to form a space for inserting  
the note by reducing an image on a page of the original document to be printed. The spacing  
20 device can freely move the reduced image in directions of top, bottom, right, and left, i.e. up-  
and-down and right-and-left, on the page when the note is inserted. The printing image  
forming apparatus further includes a display indicating device to display a combined image  
(as shown in Fig. 1B) on a screen of a display device as a preview.

Fig. 2 is a flow chart explaining a control method of the image forming apparatus having the above-described configuration. An application first is activated or started (step S10) to issue an order to print an original document. According to the issued order, a print dialog opens, and then a printer driver is activated to start to operate (step S11). A place  
5 where characters, images, or graphics are inserted as a note, e.g. a comment, is displayed on the print dialog of the printer driver (step S12).

A button for setting the note is prepared on a UI (User Interface) as a property of the printer driver so that an operator can select a designated operation of the button to move the note and comment (in the directions of top, bottom, right, and left). Whether the note setting button is selected is then determined (step S13). The operator sets a desired note and comment on the UI (step S14) after pressing the note setting button on the UI (i.e. after YES in step S13). The operator also sets a place where the note and comment is placed according to an indication prepared on the UI (step S15). Those settings are retained in the printer driver. Then, a printing region of an original document is reduced corresponding to a part where, for example, a note is inserted, and thereby, a place to insert the note is formed (as shown as the bottom portion in Fig. 1B). A combined image including the image of the original document and the note is displayed on the screen as a preview when a preview button prepared on the UI is pressed (step S16). During the operation, the objects can be simply transferred by a drag and drop operation so as to change or edit a layout on the preview (step  
20 S17). Thus, images can be easily edited. Accordingly, the apparatus displays the image that has been set on the page, and outputs the image.

A printing image forming apparatus according to the present invention may be realized by installing a recording medium, such as a CD-ROM, a flexible disk, and so forth in

which a computer readable program to perform the above-described control method is recorded, in a computer, such as a microcomputer, and then operate the program. Further, when the above-described program is installed in a computer, the computer can be operated as a print control apparatus.

5 Obviously, numerous additional modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the present invention may be practiced otherwise than as specifically described herein.

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